IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant:	Louis D. Falo *et al.*
Title:	INDUCTION OF TUMOR AND VIRAL IMMUNITY USING ANTIGEN PRESENTING CELL CO-CULTURE PRODUCTS AND FUSION PRODUCTS
Appl. No.:	10/608,424
Filing Date:	6/30/2003
Examiner:	Gerald R. Ewoldt
Art Unit:	1644
Confirmation Number:	8081

REPLY TO EXAMINER'S ANSWER PURSUANT TO 37 C.F.R. § 41.41

Mail Stop Appeal Brief - Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This reply brief is being filed pursuant to 37 C.F.R. § 41.41 in response to the Examiner's Answer dated March 27, 2008. It is timely filed, because it is being submitted within two months of the mailing date of the Examiner's Answer.

Appellants submit with this reply brief a Request for Oral Hearing along with the fee set forth in 37 C.F.R. § 41.20 pursuant to 37 C.F.R. § 41.47(b).

I. ARGUMENT

The Examiner rejects claims 1, 2, and 4-12 as lacking enablement, because the specification fails to teach both how to make and how to use the claimed invention. To reach the former conclusion, the Examiner erroneously reads a limitation into the claim contrary to the teachings of the specification. The latter conclusion is premised on inoperability, but the evidence of record clearly demonstrates that the claimed invention is, in fact, operable. Because the record clearly supports the enablement of the claimed invention, the rejections should be reversed.

A. The Specification Teaches How To Make The Claimed Invention

The claims define the subject matter that must be enabled by the specification. *Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 921 (Fed. Cir. 2004); *Bayer AG & Bayer Corp. v. Schein Pharms., Inc.*, 301 F.3d 1306, 1320 (Fed. Cir. 2002); *see also* MPEP § 2164. Here, the claims are drawn to a formulation and pharmaceutical composition comprising "at least one hybridoma having at least one first cell fused to at least one second cell." The first cell is an antigen presenting cell (APC) selected from a macrophage and a dendritic cell, and the second cell is a "virally infected cell." The specification teaches that these "hybridomas" "can be formed by any method known in the art." Spec. at p. 8, ll. 3-4. "In a preferred embodiment, the . . . APC-virally-infected cell hybridoma is formed by fusing the two types of cells together with polyethylene glycol (PEG)." Spec. at p. 8, ll. 4-6.

The Examiner does not dispute that virally-infected cells can be fused to APC cells using known methods, such as the preferred method employing PEG. This should end the enablement inquiry with respect to how to make the claimed invention. But the Examiner does not end the inquiry. Instead, the Examiner, relying on extrinsic evidence in the form of literature citations and dictionary definitions stating that a hybridoma must "comprise a tumor cell," construes the claims to require that the "hybridoma" comprise a tumor cell, and concludes that the specification does not teach how to make the claimed "hybridoma" immortal. Examiner's Answer at pp. 8-9. This claim construction flies in the face of the teachings of the specification and effectively reads a non-existent limitation into the claims.

The specification states unequivocally that the claimed "hybridoma" can be formed by a fusion of the APC with a dendritic cell using PEG. *Toro Co. v. White Consolidated Industries Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999) (meaning of words used in a claim is not construed in a "lexicographic vacuum, but in the context of the specification and drawings"). Nothing more is required; there is no suggestion that the hybridoma must comprise a tumor cell or be immortal. Indeed, the specification specifically states that a tumor cell-APC hybridoma is another type of "hybridoma," as that term is used in the claims. Spec. at p. 8, ll. 4-6.

Despite these unequivocal teachings, the Examiner concludes that "[t]he specification does not disclose that a hybridoma consisting of an APC and a virally infected cell that is *not* actually . . . a tumor cell . . .is intended to be encompassed by the term ['hybridoma']." Examiner's Answer at 9 (emphasis original). But it is hard to imagine how the specification could be more clear on this point. The claims and specification specifically define the claimed hybridoma to be an APC fused to a virally-infected cell, and the specification states that an APC fused to a tumor cells is a different type of "hybridoma." Thus, contrary to the Examiner's conclusion, the specification makes clear that the claimed "hybridoma" need not comprise a tumor cell.

In sum, the enablement rejection is premised on reading a limitation into the claim, contrary to the teachings of the specification, and then concluding that the specification fails to enable the added limitation. Such sophistry is untenable and cannot support the rejection.

B. The Specification Teaches How To Use The Claimed Invention

The specification teaches that the claimed formulation and composition can "protect against the viral infection caused by the virally infected cells used in the formulation, and/or provide therapeutic relief from patients having such viral infections." Specification at p. 4, ll. 2-4. The claimed formulation and composition provide such a benefit by expressing the viral antigens in the appropriate context of co-stimulation. Spec. at p. 4, ll. 17-22.

The Examiner doubts these teachings. Specifically, the Examiner concludes that "the formulations of the instant claims would be more likely to exacerbate viral infections than to

treat or prevent them." Examiner's Answer at p. 5. Thus, the Examiner does not contend that different modes of administration or dosing, for example, would constitute undue experimentation. Instead, the enablement rejection is premised inoperability; the Examiner simply does not believe the teachings of the specification.

Appellants have provided evidence, however, that the claimed invention is, in fact, operable. Specifically, Marañón *et al.*, *Proc. Nat'l Acad. Sci.* USA 101: 6092-97 (2004), studied the presentation of HIV antigens from dendritic cells and concluded that dendritic cells that present viral antigens stimulate virus-specific CD8+ cells. In fact, Marañón concluded that dendritic cell antigen presentation could be "exploited to ***eradicate latently infected reservoirs***." Marañón, abstract (emphasis added). Thus, Marañón confirms that the claimed invention could be employed in the treatment of viral infections, including HIV infection. Because Marañón demonstrates the operability of the claimed invention, the enablement rejection cannot be maintained.

The Examiner discounts Marañón using two separate rationales, the first procedural and second substantive. First, the Examiner argues that Marañón "cannot be used to establish enablement of the instant application," because it "comes some seven years after the priority date." Examiner's Answer at 7. Second, the Examiner argues that Marañón lacks probative value, because it "address a number of issues that were clearly not known as of the priority date." *Id.* The first rationale is contrary to well-established law, and the second rationale is a non sequitur.

First, it is well-established that a post-priority date reference can be "offered as evidence of the level of ordinary skill in the art at the time of the application and ***as evidence that the disclosed device would have been operative***." *Gould v. Quigg*, 822 F.2d 1074, 1078 (Fed. Cir. 1987) (emphasis added) (citations omitted). Indeed, it would be nonsensical to reject claims as inoperative when there exists proof that the claimed invention works as claimed. Here, Marañón serves as that proof. Specifically, Marañón demonstrates that an APC, a dendritic cell, that expresses viral antigen could be used to eradicate virus. Thus, Marañón provides independent corroboration of the teachings of the specification.

Second, the unknown "issues" identified by the Examiner, "the manner in which dendritic cells take up and present antigens," do not affect the enablement of the claimed invention. Specifically, the manner of antigen take up and presentation is mechanistic, but one of skill in the art would not need to understand the ***mechanism*** of antigen presentation in order practice the claimed invention. In other words, one of skill in the art does not need an understanding of the theoretical underpinnings of the operation to follow the teachings of the specification.

The Examiner also notes that Marañón employs dendritic cells loaded with viral antigen rather than fusions of dendritic cells and virally-infected cells, as claimed. Again, however, this factual difference does not support a conclusion of non-enablement. The Examiner has provided no explanation to justify his implicit conclusion that fusion would fail where antigen loading was successful. Accordingly, the record is devoid of evidence or explanation that casts reasonable doubt on the operability of the claimed invention.

II. CONCLUSION

Appellants respectfully request that the rejection of claims 1, 2, and 4-12 be reversed and that the Examiner be directed to issue a Notice of Allowance indicating that claims 1, 2, and 4-12 are allowed.

Respectfully submitted,

Date May 23, 2008

By _____

FOLEY & LARDNER LLP
Customer Number: 22428
Telephone: (202) 672-5404
Facsimile: (202) 672-5399

Stephen A. Bent
Attorney for Applicant
Registration No. 29,768